

## Product datasheet for **RC205202**

### **CAMK2A (NM\_171825) Human Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	CAMK2A (NM_171825) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	CAMK2A
Synonyms:	CAMKA; CaMKIIalpha; CaMKIINalpha; MRD53; MRT63
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>RC205202 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGGCCACCATCACCTGCACCCGCTTCACGGAAGAGTACCAGCTCTTCGAGGAATTGGGCAAGGGAGCCT  
 TCTCGGTGGTGCAGAGGTGTGAAGGTGCTGGCTGGCCAGGAGTATGCTGCCAAGATCATCAACACAAA  
 GAAGCTGTCAGCCAGAGACCATCAGAAGCTGGAGCGTGAAGCCCGCATCTGCCGCTGCTGAAGCACCCC  
 AACATCGTCCGACTACATGACAGCATCTCAGAGGAGGGACACCACTACCTGATCTTCGACCTGGTCACTG  
 GTGGGAACTGTTTGAAGATATCGTGGCCCGGAGTATTACAGTGAAGCGGATGCCAGTCACTGTATCCA  
 GCAGATCTGGAGGCTGTGCTGCACTGCCACCAGATGGGGTGGTGCACCGGGACCTGAAGCCTGAGAAT  
 CTGTTGCTGGCCTCCAAGCTCAAGGGTCCCGCAGTGAAGCTGGCAGACTTGGCCTGGCCATAGAGGTGG  
 AGGGGAGCAGCAGGCATGGTTTGGTTTGCAGGGACTCCTGGATATCTCTCCCAGAAGTCTGCGGAA  
 GGACCCGTACGGGAAGCCTGTGGACCTGTGGGCTTGTGGGTCATCCTGTACATCCTGCTGGTTGGGTAC  
 CCCCCGTTCTGGGATGAGGACCAGCACCCGCTGTACAAGCAGATCAAAGCCGGCGCTATGATTTCCCAT  
 CGCCGGAATGGGACACTGTCACCCCGGAAGCAAGGATCTGATCAATAAGATGCTGACCATTAACCCATC  
 CAAACGCATCACAGCTGCCGAAGCCCTTAAGCACCCCTGGATCTCGCACCGCTCCACCGTGGCATCCTGC  
 ATGCACAGACAGGAGACCGTGGACTGCCTGAAGAAGTTCAATGCCAGGAGGAACTGAAGGGAGCCATTC  
 TCACCACGATGCTGGCCACCAGGAATCTCCGGAGGGAAGTGGGGGAAACAAGAAGAGCGATGGTGT  
 GAAGGAATCCTCAGAGAGCACCACACCACCATCGAGGATGAAGACCAAAGTGCAGAAACAGGAAATT  
 ATAAAAGTGACAGAGCAGCTGATTGAAGCCATAAGCAATGGAGATTTTGTAGTCTACACGAAGATGTGCG  
 ACCCTGGCATGACAGCCTTCGAACCTGAGGCCCTGGGGAACCTGGTTGAGGGCCTGGACTCCATCGATT  
 CTATTTTGAAGAACTGTGGTCCCGGAACAGCAAGCCCGTGCACACCACCATCCTGAATCCCACATCCAC  
 CTGATGGGCGACGAGTACGCTGCATCGCTACATCCGCATCACGCAGTACCTGGACGCTGGCGGCATCC  
 CACGCACCGCCAGTCGGAGGAGACCCGTGTCTGGCACCGCCGGGACGGCAAATGGCAGATCGTCCACTT  
 CCACAGATCTGGGGCGCCCTCCGCTCCTGCCAC

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC205202 protein sequence  
 Red=Cloning site Green=Tags(s)

MATITCTRFTEEYQLFEELGKGAFSVVRRVCVKVLAGQEYAAKIINTKKSARDHQKLEREARICRLLKHP  
 NIVRLHDSISEEGHHYLIFDLVTGGELFEDIVAREYYSEADASHCIQQILEAVLHCHQMGGVVHRDLKPEN  
 LLLASKLKGAAVKLADFLAIEVEGEQQAWFGFAGTPGYLSPEVLRKDPYKPVDLWACGVILYILLVGY  
 PPFWDEDQHRLYKQIKAGAYDFPSPEWDTVTPEAKDLINKMLTINPSKRITAAEALKHPWISHRSTVASC  
 MHRQETVDCLKKFNARRKLGAILTTMLATRNFSGGKSGNKKSDGVKESSESTNTTIEDEDTKVRKQEI  
 IKVTEQLIEAISNGDFESYTKMCDPGMTAFEPEALGNLVEGLDFHRFYFENLWSRNSKPVHTTILNPHIH  
 LMGDESACIAYIRITQYLDAGGIPRTAQSEETRVWHRDQKQIVHFHRSAPSVLPH

**TR**TRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:**

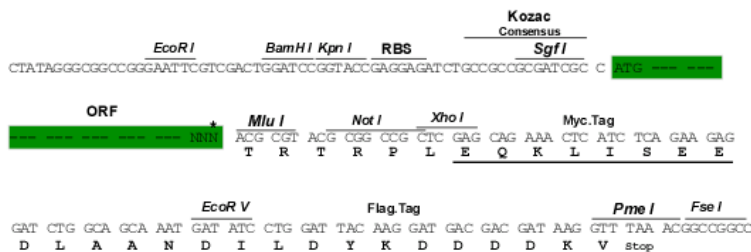
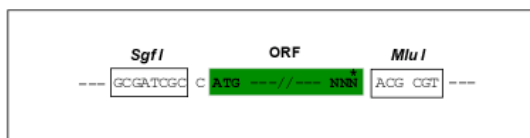
[https://cdn.origene.com/chromatograms/mk6515\\_h08.zip](https://cdn.origene.com/chromatograms/mk6515_h08.zip)

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**

Cloning sites used for ORF Shutting:



\* The last codon before the Stop codon of the ORF

**ACCN:** NM\_171825

**ORF Size:** 1434 bp

**OTI Disclaimer:** The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**Note:** Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

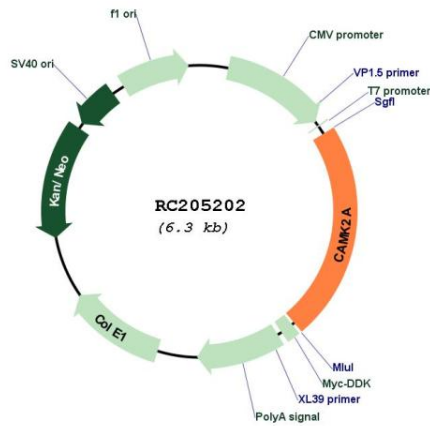
**RefSeq:** [NM\\_171825.2](#)
**RefSeq Size:** 4885 bp

**RefSeq ORF:** 1437 bp

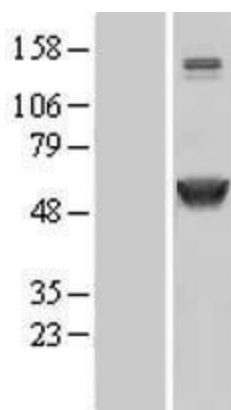
**Locus ID:** 815

**UniProt ID:** [Q9UQM7](#)  
**Cytogenetics:** 5q32  
**Protein Families:** Druggable Genome, Protein Kinase  
**Protein Pathways:** Calcium signaling pathway, ErbB signaling pathway, Glioma, GnRH signaling pathway, Long-term potentiation, Melanogenesis, Neurotrophin signaling pathway, Olfactory transduction, Oocyte meiosis, Wnt signaling pathway  
**MW:** 54.1 kDa  
**Gene Summary:** The product of this gene belongs to the serine/threonine protein kinases family, and to the Ca(2+)/calmodulin-dependent protein kinases subfamily. Calcium signaling is crucial for several aspects of plasticity at glutamatergic synapses. This calcium calmodulin-dependent protein kinase is composed of four different chains: alpha, beta, gamma, and delta. The alpha chain encoded by this gene is required for hippocampal long-term potentiation (LTP) and spatial learning. In addition to its calcium-calmodulin (CaM)-dependent activity, this protein can undergo autophosphorylation, resulting in CaM-independent activity. Several transcript variants encoding distinct isoforms have been identified for this gene. [provided by RefSeq, Jun 2018]

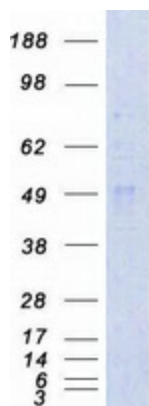
### Product images:



Circular map for RC205202



Western blot validation of overexpression lysate (Cat# [LY406882]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC205202 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified CAMK2A protein (Cat# [TP305202]). The protein was produced from HEK293T cells transfected with CAMK2A cDNA clone (Cat# RC205202) using MegaTran 2.0 (Cat# [TT210002]).